

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	80	("overbased alkaline earth metal sulfonate") and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 08:49
S2	1996	(friction adj modifier) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 10:21
S3	20	S1 and S2	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 10:28
S4	20	S1 and S2	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 10:29
S5	596	"overbased calcium sulfonate"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 10:29
S6	173	S5 and S2	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 10:31
S7	116	S6 and (succinic adj anhydride)	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:03
S8	9	S6 and (succinic adj anhydride) and (particle adj size)	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 10:33
S9	1	S6 and thiodiglycol	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 10:41
S10	5	S6 and (calcium adj carboxylate)	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 10:45
S12	2	S6 and (earth adj metal adj carboxylate)	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 10:45
S13	14	S6 and triethanolamine	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:14

## EAST Search History

S14	34	S5 and triethanolamine	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:14
S15	28	S5 and (triethanolamine near "fatty acid" or "fatty ester")	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:15
S16	24	S5 and (triethanolamine near "fatty acid" or "fatty ester") and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:16
S17	0	S5 and (triethanolamine near ("fatty acid" or "fatty ester")) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:16
S18	0	S5 and (alkanolamine near ("fatty acid" or "fatty ester")) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:16
S19	0	S5 and (dialkylene near ("fatty acid" or "fatty ester")) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:16
S20	0	S5 and ((calcium adj carboxylate) and (barium adj carboxylate)) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:17
S21	11	S5 and ((calcium adj carboxylate) or (barium adj carboxylate)) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:25
S22	140	S5 and ((oleic adj acid) or (ricinoleic adj acid) or (isostearic adj acid) or (erucic adj acid) or (isooleic adj acid) or (methyl adj oleate) or ("tall oil fatty acid") or ("oleic acid/stearic acid")) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 12:09
S23	1	S22 nd S2	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:27
S24	50	S22 and S2	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:39

## EAST Search History

S25	0	"diethylene glycol with methyl oleate"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:39
S26	1	(diethylene adj glycol) near (methyl adj oleate)	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:40
S27	1	thiodiglycol near (methyl adj oleate)	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:41
S28	11803	bis(2-hydroxyethyl)sulfide	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:44
S29	187	S28 and (methyl adj oleate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:41
S30	0	"bis(2-hydroxyethyl)sulfide"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:42
S31	38583	Bis(2-hydroxyethyl)ether	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:43
S33	443	(Bis adj (2-hydroxyethyl) adj ether)	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:44
S34	76	bis adj (2-hydroxyethyl) adj sulfide	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 16:58
S35	0	S34 and (methyl adj oleate)	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:44
S36	2	S33 and (methyl adj oleate)	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 15:04
S37	1	methyl adj cis-9-octadecanoate	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:46

## EAST Search History

S38	1591	(tris adj (2-hydroxyethyl) adj amine) or (tri adj (hydroxyethyl) adj amine) or nitrilotrisethanol	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:47
S39	1227	S38 and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:47
S40	8	S39 and S22	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:50
S41	85	(barium adj carboxylate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 12:14
S42	0	S41 and S5	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:51
S43	0	S41 and S1	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:52
S44	79	S5 and (particle adj size)	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:52
S45	59	S5 and (particle adj size) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 11:52
S46	50993	((oleic adj acid) or (ricinoleic adj acid) or (isostearic adj acid) or (erucic adj acid) or (isooleic adj acid) or (methyl adj oleate) or ("tall oil fatty acid") or ("oleic acid/stearic acid")) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 12:11
S47	220	S39 and S46	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 12:11
S48	100	triethanolamine near ((oleic adj acid) or (ricinoleic adj acid) or (isostearic adj acid) or (erucic adj acid) or (isooleic adj acid) or (methyl adj oleate) or ("tall oil fatty acid") or ("oleic acid/stearic acid")) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/03 11:01

## EAST Search History

S49	2	triethanolamine near ((oleic adj acid) or (ricinoleic adj acid) or (isostearic adj acid) or (erucic adj acid) or (isooleic adj acid) or (methyl adj oleate) or ("tall oil fatty acid") or ("oleic acid/stearic acid")) and @ad<"20031209" and S2	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 12:13
S50	439	(earth adj metal adj carboxylate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 12:14
S51	12	S50 and S2	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 12:19
S52	1	(typical adj friction adj modifiers) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 12:21
S53	176	(friction adj modifiers adj include) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 14:38
S54	2418	(triethanolamine adj oleate)	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 12:32
S55	1700	(triethanolamine adj oleate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 12:34
S56	87	S55 and friction	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 12:34
S57	0	S55 and S5	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 12:34
S58	5	(triethanolamine adj isostearate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 12:34
S59	0	((friction adj modifiers adj include) near oleate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 14:38
S60	14	((friction adj modifiers adj include) with \$oleate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 14:40

## EAST Search History

S61	0	((friction adj modifiers adj include) with triethanol\$) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 14:40
S62	0	((friction adj modifiers adj include) with trieth\$) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 14:40
S63	0	((friction adj modifier) with triethanol\$) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 14:41
S64	88	((friction adj modifier) with \$oleate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 14:46
S65	0	("reaction product of triethanolamine")	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 14:47
S66	51155	triethanolamine and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 14:47
S67	65412	"oleic acid"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 14:48
S68	1996	(friction adj modifier) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 14:48
S69	107	S66 and S68	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 15:03
S70	1	("4105571").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/02 15:03
S71	1	("3933659").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/02 15:16
S72	1	("4176074").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/02 15:31
S73	2	("3324033").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/02 15:32

## EAST Search History

S74	2	EP-389327-\$.did.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/08/02 15:35
S75	14	(triethanolammonium adj oleate)	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 15:37
S76	0	(triethanolammonium adj isostearate)	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 15:37
S77	92622	(diethylene adj glycol)	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 15:45
S78	1	(friction adj modifiers adj include) near (oleic or oleate)	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 15:39
S79	256	S68 and (tall adj oil)	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 15:40
S80	58	S79 and alkanolamine	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 15:43
S81	51	S79 and triethanolamine	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 15:46
S82	34	S77 and S81 and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 15:45
S83	68098	(S77 or S81) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 15:45
S84	38583	Bis(2-hydroxyethyl)ether	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 15:45
S85	88258	(S77 or S84) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 15:46
S86	641	S85 and (methyl adj oleate)	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 15:46
S87	113	S86 and S68	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 15:47

## EAST Search History

S88	443	(Bis adj (2-hydroxyethyl) adj ether)	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 15:47
S89	68234	(S77 or S88) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 15:48
S90	497	S89 and S68	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 15:48
S91	102	S90 and (methyl adj oleate)	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 15:53
S92	5	(amorphous adj overbased adj calcium adj sulfonate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 16:30
S93	1	("6444625").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/02 16:01
S94	596	"overbased calcium sulfonate"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 16:02
S95	20	S94 and (nm or angstrom\$1) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/02 16:02
S96	59	amorphous and S94 and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 16:14
S97	6	amorphous and S94 and (nm or angstrom\$1) @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 16:17
S98	2	("3492231").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/02 16:15
S99	14	S94 and calcite and size and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 16:22
S10 0	1	EP-405879-\$.did.	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/03 13:56



## EAST Search History

S10 1	2	(crystalline adj overbased adj calcium adj sulfonate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 16:30
S10 2	76	bis adj (2-hydroxyethyl) adj sulfide	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 16:58
S10 3	1	S102 and (friction adj modifier)	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/02 17:07
S10 4	352	(lubricant adj composition) and vessel and stor\$3 and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 08:46
S10 5	96	(lubricant adj composition) and vessel and stor\$3 and @ad<"20031209" and overbased	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 08:48
S10 6	10	(lubricant adj composition) and (vessel near stor\$3) and @ad<"20031209" and overbased	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 08:51
S10 7	11	(lubricant) and (vessel near stor\$3) and @ad<"20031209" and overbased	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 08:52
S10 8	1066	(lubricant near stor\$3) @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 08:52
S10 9	70	(lubricant near stor\$3) and vessel @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 08:52
S11 0	214	(polyisobutylene adj succinic adj anhydride) and (friction adj modifier) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 09:43
S11 1	11	(polyisobutylene adj succinic adj anhydride) with (friction adj modifier) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 10:20
S11 2	11	(polyisobutylene adj succinic adj anhydride) with (copper) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 09:48
S11 3	11	PIBSA with (friction adj modifier) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 10:46
S11 4	81	PIBSA with copper and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 09:51
S11 5	50	PIBSA with copper and (overbased adj calcium) @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 09:57

## EAST Search History

S11 6	0	2,2',2-Nitriлотriethanol Triethylamine Trolamine Nitriло-2,2',2"-Triethanol Daltogen Trihydroxytriethylamine Tris(hydroxyethyl)amine Sodium ISA 2,2',2"-nitriлотriethanol sterolamide (thiofaco adjt-35) 2,2', 2"-trihydroxytriethylamine and tris(2-hydroxyethyl)amine T-35 Nitriлотris(ethanol) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 09:59
S11 7	1246521	Triethylamine Trolamine Nitriло-2,2', 2"-Triethanol Daltogen Trihydroxytriethylamine Tris(hydroxyethyl)amine Sodium ISA 2,2',2"-nitriлотriethanol sterolamide (thiofaco adjt-35) 2,2', 2"-trihydroxytriethylamine and tris(2-hydroxyethyl)amine T-35 Nitriлотris(ethanol) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	OR	ON	2006/08/03 09:59
S12 0	3232	Triethylamine Trolamine Daltogen Trihydroxytriethylamine (Tris adj (hydroxyethyl) adj amine) (Sodium adj ISA) (thiofaco adj t-35) (tris adj (2-hydroxyethyl) adj amine) T-35 (Nitriлотris adj (ethanol)) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	OR	ON	2006/08/03 10:01
S12 1	0	Triethylamine Trolamine Daltogen Trihydroxytriethylamine (Tris adj (hydroxyethyl) adj amine) (Sodium adj ISA) (thiofaco adj t-35) (tris adj (2-hydroxyethyl) adj amine)(Nitriлотris adj (ethanol)) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 10:02
S12 2	2470	Triethylamine Trolamine Daltogen Trihydroxytriethylamine (Tris adj (hydroxyethyl) adj amine) (Sodium adj ISA) (thiofaco adj t-35) (tris adj (2-hydroxyethyl) adj amine)(Nitriлотris adj (ethanol)) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	OR	ON	2006/08/03 10:02
S12 3	0	(Triethylamine Trolamine Daltogen Trihydroxytriethylamine (Tris adj (hydroxyethyl) adj amine) (Sodium adj ISA) (thiofaco adj t-35) (tris adj (2-hydroxyethyl) adj amine)(Nitriлотris adj (ethanol)))) near (oleic adj acid) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	OR	ON	2006/08/03 10:02

## EAST Search History

S12 4	101	(Triethylamine Trolamine Daltogen Trihydroxytriethylamine (Tris adj (hydroxyethyl) adj amine) (Sodium adj ISA) (thiofaco adj t-35) (tris adj (2-hydroxyethyl) adj amine)(Nitrilotris adj (ethanol))) with (oleic adj acid) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	OR	ON	2006/08/03 10:04
S12 5	0	(Triethylamine Trolamine Daltogen Trihydroxytriethylamine (Tris adj (hydroxyethyl) adj amine) (Sodium adj ISA) (thiofaco adj t-35) (tris adj (2-hydroxyethyl) adj amine)(Nitrilotris adj (ethanol))) with (isostearic adj acid) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	OR	ON	2006/08/03 10:04
S12 6	0	(Triethylamine Trolamine Daltogen Trihydroxytriethylamine (Tris adj (hydroxyethyl) adj amine) (Sodium adj ISA) (thiofaco adj t-35) (tris adj (2-hydroxyethyl) adj amine)(Nitrilotris adj (ethanol))) with friction and @ad<"20031209"	US-PGPUB; USPAT; USOCR	OR	ON	2006/08/03 10:04
S12 7	81	(Triethylamine Trolamine Daltogen Trihydroxytriethylamine (Tris adj (hydroxyethyl) adj amine) (Sodium adj ISA) (thiofaco adj t-35) (tris adj (2-hydroxyethyl) adj amine)(Nitrilotris adj (ethanol))) and friction and @ad<"20031209"	US-PGPUB; USPAT; USOCR	OR	ON	2006/08/03 10:19
S12 8	1	("4792410").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/03 10:19
S12 9	20	(polyisobutenyl adj succinic adj anhydride) with (friction adj modifier) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 10:21
S13 0	1	("4176074").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/03 10:21
S13 1	51004	((oleic adj acid) or (ricinoleic adj acid) or (isostearic adj acid) or (erucic adj acid) or (isooleic adj acid) or (methyl adj oleate) or ("tall oil fatty acid") or ("oleic acid/stearic acid")) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/03 11:01
S13 2	522	S122 and S131	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 11:02
S13 3	16	S122 and S131 and (friction adj modifier)	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 11:04

## EAST Search History

S13 4	5	(methyl adj oleate) with (friction adj modifier)	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 11:04
S13 5	0	("EP-306909-\$.did.").PN.	US-PGPUB; USPAT; USOCR; EPO	OR	OFF	2006/08/03 13:51
S13 6	3	("5283276").URPN.	USPAT	AND	ON	2006/08/03 13:53
S13 7	16	haziness and (overbased adj calcium) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/03 14:01
S13 8	87	haze and (overbased adj calcium) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/03 14:01
S13 9	4	haze and muir.in. and (overbased adj calcium) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	ON	2006/08/03 14:02
S14 0	8	("3830739"   "4387033"   "4541938"   "4604219"   "4780224"   "4810396"   "4822502").PN.	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 15:48
S14 1	97	(overbased adj calcium adj sulfonate) and diameter and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 16:32
S14 2	0	(overbased adj calcium adj sulfonate) near diameter and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 15:49
S14 3	2	(overbased adj calcium adj sulfonate) with diameter and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 15:49
S14 4	1	(crystalline adj overbased adj calcium adj sulfonate) and (particle adj size) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 16:39
S14 5	9	calcite and (friction adj modifier) and lubricant and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 16:42
S14 6	3013	calcite and (particle adj size)	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 16:42
S14 7	75	calcite and (particle adj size) and @ad<"20031209" and overbased	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/03 16:42
S14 8	0	("3194761342981140575044123369").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/04 08:50

## EAST Search History

S14 9	6	((("3194761") or ("3429811") or ("4057504") or ("4123369"))).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/04 08:50
S15 0	2	("2951041").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/04 09:38
S15 1	0	("63000291").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/04 09:38
S15 2	1	("6300291").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/04 10:20
S15 3	0	("(bariumadjcarboxylate)").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/04 14:20
S15 4	115	("oleic acid methyl ester") and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 10:47
S15 5	1	("oleic acid methyl ester") and thiodiglycol and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 10:57
S15 6	4366	transesterification and (diethylene adj glycol) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 10:58
S15 7	445	transesterification and oleate and (diethylene adj glycol) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:01
S15 8	58	transesterification and (methyl adj oleate) and (diethylene adj glycol) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:05
S15 9	25	(diethylene adj glycol adj oleate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:15
S16 0	0	(thiodiglycol adj oleate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:09
S16 1	0	("reaction product of a diethylene glycol") and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:09
S16 2	422	(friction adj modifier) and (polyol adj ester) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:10
S16 3	328	(friction adj modifier) and (polyol adj ester) and glycol and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:23

## EAST Search History

S16 4	18	(friction adj modifier) with (polyol adj ester)and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:10
S16 5	18	(friction adj modifier) with (polyol adj ester) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:11
S16 6	154	(diethylene adj glycol adj \$oleate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:21
S16 7	2	(diethylene adj glycol adj \$oleate) and (friction adj modifier) @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:33
S16 8	1	("3933659").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/04 11:17
S16 9	0	(thiodiethylene adj glycol adj \$oleate) and (friction adj modifier) @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:21
S17 0	0	(thiodiethylene adj glycol adj \$oleate) @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:21
S17 1	0	(thiodiglycol adj \$oleate) @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:21
S17 2	156	(diethylene adj glycol adj \$oleate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO; JPO	AND	ON	2006/08/04 11:22
S17 3	215	(friction adj modifier) and (polyol adj ester) and diethylene and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:27
S17 4	165	(friction adj modifier) and (polyol adj ester) and (diethylene adj glycol) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:30
S17 5	239	(friction adj modifier) and (oleic adj acid) and (diethylene adj glycol) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:30
S17 6	56	S174 and S175	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:30
S17 7	5	(ethylene adj glycol adj \$oleate) and (friction adj modifier) @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:50
S17 8	89	(\$ethylene adj glycol adj \$oleate) and (friction adj modifier) @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 11:55

## EAST Search History

S17 9	0	(\$6ethylene adj glycol adj \$oleate) with (friction adj modifier) @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 12:32
S18 0	26	thiodiglycol and (friction adj modifier) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:02
S18 1	4839	thiodiglycol	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:02
S18 2	76	(Bis adj (2-Hydroxyethyl) adj Sulfide)	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:03
S18 3	16	(Bis adj (Beta-Hydroxyethyl) adj Sulfide)	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:03
S18 4	1723	Thiodiethylene adj Glycol	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:03
S18 5	51	(S181 or S182 or S183 or S184) and (methyl adj oleate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:04
S18 6	27	S185 and friction	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:04
S18 7	0	("(bariumadjcarboxylate)").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/04 14:20
S18 8	133	barium adj carboxylate	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:21
S18 9	84	(barium adj carboxylate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:25
S19 0	1	"4036810".pn.	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:25
S19 1	23	(barium adj salicylate) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:34
S19 2	3	(barium adj salicylate) and friction and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:34
S19 3	695	(friction adj reducer) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:35

## EAST Search History

S19 4	3	(friction adj reducer) with barium and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:36
S19 5	19	(friction adj improver) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:36
S19 6	532	(friction adj reducing adj agent) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:36
S19 7	0	(friction adj reducing adj agent) with barium and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:36
S19 8	1	(S193 or S196) and (barium adj (carboxylate or salicylate or \$oleate))	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:52
S19 9	3082	(S181 or S182 or S183 or S184) and (fatty adj acid)	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:53
S20 0	2984	S199 and ester	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:53
S20 1	1996	(friction adj modifier) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 14:53
S20 2	67	S200 and (S193 or S196 or S195 or S201)	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 15:19
S20 3	12	S200 and (S193 or S196 or S195 or S201) and "565"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 15:19
S20 4	0	EP-565487-\$.did.	US-PGPUB; USPAT; USOCR; EPO	AND	OFF	2006/08/04 15:22
S20 5	0	EP-0565487-\$.did.	US-PGPUB; USPAT; USOCR; EPO	AND	OFF	2006/08/04 15:21
S20 6	2	("0565487").PN.	US-PGPUB; USPAT; USOCR; EPO	OR	OFF	2006/08/04 15:21
S20 7	2	("0565487").PN.	US-PGPUB; USPAT; USOCR; EPO	OR	OFF	2006/08/04 15:21



## EAST Search History

S20 8	1026	sulfurized and (S193 or S195 or S196 or S201) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	OFF	2006/08/04 15:23
S20 9	40	sulfurized with ((friction adj modifier) or (friction adj improv\$3) adj (friction adj reduc\$3)) and @ad<"20031209"	US-PGPUB; USPAT; USOCR; EPO	AND	OFF	2006/08/04 15:25
S21 0	3	((("4191659") or ("3356702"))).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/04 15:27
S21 1	1960	thioglycol	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 15:27
S21 2	25	thioglycol and (S193 or S195 or S196 or S201)	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 15:31
S21 3	9	"3198737"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/04 15:31
S21 4	5	("3198737").URPN.	USPAT	AND	ON	2006/08/04 16:10
S21 5	0	"preparation of diethylene glycol dioleate"	USPAT	AND	ON	2006/08/04 16:55
S21 6	45	(diethylene adj glycol adj monooleate)	USPAT	AND	ON	2006/08/04 16:55
S21 7	5	("3198737").URPN.	USPAT	AND	ON	2006/08/04 17:16
S21 8	1	("4335004").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/07 08:29
S21 9	5	("3198737").URPN.	USPAT	AND	ON	2006/08/07 08:58
S22 0	2	("3112268").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/07 09:03
S22 1	10	((("2540570") or ("2585862") or ("2603604") or ("2614982") or ("3189547"))).PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/07 09:04
S22 2	2	("2454568").PN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/08/07 10:21
S22 3	132	508/306.ccls.	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/07 10:26

## EAST Search History

S22 4	58	S223 and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/07 10:22
S22 5	27	508/193.ccls. and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/07 10:26
S22 6	538	lubricant and (storage adj vessel) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/07 12:09
S22 7	8	lubricant near (storage adj vessel) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/07 12:10
S22 8	18	lubricant with (storage adj vessel) and @ad<"20031209"	US-PGPUB; USPAT; USOCR	AND	ON	2006/08/07 12:20